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वस्त्रादि — उच्च घनत्व पोलीइथाइलीन के  
फीते — विशिष्टि  
( पहला पुनरीक्षण )

Textiles — High Density  
Polyethylene Webbing —  
Specification  
( First Revision )

ICS 59.060.10, 59.080.50

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## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Technical Textiles for Clothtech Applications including Narrow Fabrics and Braids Sectional Committee had been approved by the Textile Division Council.

This standard specifies the constructional requirements of high density polyethylene webbing, high density polyethylene webbing is excellent webbing due to properties like resistance to mildew, UV damage, abrasion, and acids, alkalis, oil and gases which makes it suitable for uses in furniture, bed-bases, etc.

This standard, first published in 1983, This standard has been revised again to incorporate the following major changes:

- a) Title of the standard has been modified;
- b) BIS certification marking clause has been modified; and
- c) References to Indian Standard given in Annex A has been updated; and
- d) Sampling and criteria for conformity has been modified.

The composition of the Committee responsible for the formulation of this standard is given in Annex D.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***TEXTILES — HIGH DENSITY POLYETHYLENE WEBBING —  
SPECIFICATION***( First Revision )***1 SCOPE**

This standard prescribes the requirements of high density polyethylene webbing of 40 mm and 60 mm width for using on, furniture, bed-bases, etc.

**2 REFERENCES**

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

**3 MATERIAL**

High density polyethylene (HDPE) tapes of 50 to tex

150 tex (450 denier to 1 350 denier) conforming to IS 6192 may be used for manufacturing HDPE webbing.

**4 REQUIREMENTS****4.1 Weave — Plain****4.2 Length of the Roll**

The length of roll when measured in accordance with IS 1954 shall not be less than the declared length.

**4.3** The high density polyethylene webbing shall conform to the requirements as given in Table 1.

**4.4** The dyed high density polyethylene webbing shall also conform to the colour fastness requirements as given in Table 2.

**Table 1 Requirements of HDPE Webbing**  
(Clause 4.3)

Sl No.	Width	Mass	Ends in full Width	Picks per	Breaking load on full width, Min
	mm	g/m		dm	N
(1)	(2)	(3)	(4)	(5)	(6)
i)	40	12	180	45	1 600
ii)	60	16	220	50	1 800
Tolerance	± 2 mm	± 5 percent	+ 5 - 2.5 percent	± 5 percent	—
Method of Test, Ref to	IS 1954	IS 1964	IS 1963		IS 1969

**Table 2 Colour Fastness Requirements of Dyed HDPE Webbing**  
(Clause 4.4)

Sl No.	Characteristic	Requirement	Method of Test
(1)	(2)	(3)	(4)
i)	Colour fastness to:		
	a) Light	5 or above	IS/ISO 105-B02 IS/ISO 105-C10
	b) Washing (Test 3)		
	1) Change in the colour of the sample	5	
	2) Staining on cotton or wool	5	

Table 2 (Concluded)

Sl No.	Characteristic	Requirement	Method of Test
(1)	(2)	(3)	(4)
	c) Perspiration (both acidic and alkaline test liquor)		IS/ISO 105-E04
	1) Change in colour of the sample	5	
	2) Staining on wool or cotton	5	

**4.5 Joint Strength**

The average strength of the fabric samples when tested according to the method given in Annex B shall not be less than 490 N.

**4.6 Creep**

The average creep of the five samples when tested according to the method given in Annex C shall not be more than 5.5 percent.

**5 PACKING**

**5.1** The rolls may be supplied loose or packed as agreed between buyer and seller.

**6 MARKING**

**6.1** Each roll of webbing shall be suitably marked with the following information:

- Name or trade-mark of the manufacturer;
- Net mass of the roll (kg);
- Length (m) and width (mm) of webbing in

the roll; and

- Any other information/instruction provided by the manufacturer/required under law.

**6.2 BIS Certification Marking**

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

**7 SAMPLING****7.1 Lot**

The rolls of same constructional particulars delivered to a buyer against a dispatch note shall constitute a lot.

**7.2** Unless otherwise specified in the contract or order, following sampling plan may be followed in respect of non-destructive and destructive tests:

**Table 3 Sample Size and Permissible Number of Defective Roll**  
(Clause 7.2)

Sl No.	Lot Size (Rolls)	Sample Size for Non-Destructive Tests (Rolls)	Sample Size for Destructive Tests (Rolls)	Permissible No. of Failures (Rolls)	
				for Non-Destructive Tests	for Destructive Tests
(1)	(2)	(3)	(4)	(5)	(6)
i)	Up to 100	8	3	0	
ii)	101 to 300	13	4	1	
iii)	301 to 500	20	5	2	None to fail
iv)	501 to 1 000	32	7	3	
v)	Above 1 000	50	10	5	

## ANNEX A

(Clause 2)

## LIST OF REFERRED STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
IS 1954 : 1990	Determination of length and width of woven fabrics — Methods ( <i>second revision</i> )		strip method ( <i>fourth revision</i> )
IS 1963 : 1981	Methods for determination of threads per unit length in woven fabrics ( <i>second revision</i> )	IS 6192 : 1994	Textiles — Monoaxially oriented high density polyethylene tapes ( <i>second revision</i> )
IS 1964 : 2001	Textiles — Methods for determination of mass per unit length and mass per unit area of fabrics ( <i>second revision</i> )	IS/ISO 105-C10 : 2006	Textiles — Tests for colour fastness: Part C10 Colour fastness to washing with soap or soap and soda
IS 1969 (Part 1) : 2018	Textiles — Tensile properties of fabrics: Part 1 Determination of maximum force and elongation at maximum force using the	IS/ISO 105-B02 : 2014	Textiles — Tests for colour fastness: Part B02 Colour fastness to artificial light — Xenon arc fading lamp test
		IS/ISO 105-E04 : 2013	Textiles — Tests for colour fastness: Part E04 Colour fastness to perspiration

## ANNEX B

(Clause 4.5)

### METHOD FOR DETERMINATION OF JOINT STRENGTH

#### B-1 TESTING APPARATUS

**B-1.1** Tensile testing machine of constant rate of traverse type with the following provisions:

- a) Two clamps with suitable provision for gripping the webbing sample stapled with wooden block at one clamp and the free end of the webbing at the other clamp;
- b) Clamps adjusted to 20 cm;
- c) The rate of traverse of the testing machine adjusted to  $(300 \pm 15)$  mm/min; and
- d) The load range of the machine shall be such that all the observed values would be between 10 percent and 90 percent of the full scale load. The permissible error in the machine at any point in this range shall not exceed  $\pm 1$  percent.

#### B-2 PROCEDURE

**B-2.1** Staple a suitable sample of webbing across its full width to a block of wood by using seven staples through the single thickness of webbing and seven staples through the double thickness of webbing. The staples used shall be made of wire of diameter 0.610 mm to 0.813 mm. A convenient size for the wooden block is 60 mm  $\times$  25 mm  $\times$  25 mm.

**B-2.2** Fix the wooden block in the upper clamp so that tension can be applied along the length of the webbing and in the plane of the stapled joint.

**B-2.3** Secure the free end of webbing to the jaws of the lower clamp.

**B-2.4** Operate the machine and carry out the test to rupture and record the breaking load of the webbing.

## ANNEX C

(Clause 4.6)

### METHOD FOR DETERMINATION OF CREEP

#### C-1 PROCEDURE

**C-1.1** Take a sample of webbing of length 1.2 metre.

**C-1.2** Draw two lines on the sample, transverse to the warp direction and  $(100.0 \pm 0.1)$  cm apart. When marking these lines the webbing shall be laid on a smooth flat surface and the minimum necessary tension should be applied to it to keep it straight.

**C-1.3** Suspend the webbing vertically from a rigidly fixed clamp.

**C-1.4** Fix a second clamp to the free end of the specimen and add weight to this clamp slowly so that the total weight suspended by the webbing is 10 kg. The distance between the two clamps, that is the distance between two transverse lines, shall be 1 m.

**C-1.5** Measure the distance (L) between the transverse lines marked on it after the tension has been applied to the specimen for 24 hours.

**C-1.6** The value  $(L-100)$  is the percentage creep for the specimen.

## ANNEX D

(Foreword)

## COMMITTEE COMPOSITION

Technical Textiles for Clothtech Applications including Narrow Fabrics and Braids Sectional Committee, TXD 39

<i>Organization</i>	<i>Representative(s)</i>
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### Amendments Issued Since Publication

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